Landing a Job in Urban Space: The Extent & Effects of Spatial Mismatch

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Research Questions

• Is access to employment opportunities for non-college graduates greater in the suburbs than in the central city?
• Due to the non-uniform geographic pattern of suburban job growth, is there significant variation in access within the suburbs?
• Are individuals expanding their search geographically in response to the decentralization of employment?
• If not, what aspects of the costs/benefits of job search make longer commutes and expanded search patterns an inefficient response to the geographic labor demand shift that has occurred over the past 3 decades?
Necessary/Sufficient Conditions to Generate Spatial Mismatch

1. Residential location decisions must be constrained

2. Firms must face higher costs (set-up/production costs) in areas where residents are constrained

3. Search or commuting costs must be non-trivial
Reasons Why We Expect Race Differences in Labor Market Effects of Spatial Related Factors

- Blacks face more residential location constraints due to discrimination in the suburban housing market and mortgage market.

- Blacks have greater search/commute costs due to lower car ownership rates.

- Blacks have inferior social networks and information to connect them to jobs.
Primary Hypothesis to be Tested

- Job search behavior and job search outcomes of more residentially constrained racial/ethnic groups are more sensitive to local job accessibility

  - How job search behavior and job search outcomes are affected by local job accessibility is dependent on the fluidity of the labor market
Empirical Challenges

• Confronting problem of endogeneity of residential location

• Characterizing the spatial distribution of employment opportunities by creating an access measure
Data: MCSUI – HH & Employer Surveys

- Employer and HH surveys administered ’92- ’94 in Atlanta, Boston, and L.A.

- HH Survey. Sample restricted to individuals who began most recent job search within past year—analysis included both on-the-job search and search while unemployed (Final sample: 1205); contains extensive set of search method variables.
Data contd.

- Employer Survey.
  - 800 Employers surveyed per MSA
  - Info about number of net new hires over past year
  - Info about search/recruitment process and methods used to fill most recent job not requiring a college degree
  - Sampling frame: stratified ex-ante by firm size categories to reproduce distribution of employment across these categories
Estimating Distance Decay Function

• Use CTPP data on journey-to-work flows between neighborhoods

• Model extent of commuting between every possible neighborhood pair as a function of
  1) # of workers living in neighborhood $i(L_i)_j$
  2) # of jobs located in neighborhood $j$-jobs($occ_{ij}$)
  3) Accessibility of job location $j$ to all alternative job locations available ($A_j$)
  4) Occupational/skill compatibility between workers who live in neighborhood $i$ and neighborhood $j$-jobs($occ_{ij}$)
  5) Distance in miles between neighborhoods $i$ and $j$($d_{ij}$), and cost of overcoming this distance (captured by the distance decay function, $F_{ij}$).
Access Measures

\[
\text{Access}_{i}^{TO} = \left[ \frac{\sum_{j=1}^{J} \left( \frac{E_j(e^{\lambda d_{ij}})}{E} \right)}{\sum_{k=1}^{K} \left( \frac{NC_k(e^{\lambda d_{ik}})}{NC} \right)} \right] ; \quad \text{Access}_{i}^{NH} = \left[ \frac{\sum_{j=1}^{J} \left( \text{NETHIRES}_j(e^{\lambda d_{ij}}) \right)}{\sum_{k=1}^{K} \left( \frac{NC_k(e^{\lambda d_{ik}})}{NC} \right)} \right]
\]

where \( i, j, k \) indexes tracts/neighborhoods;
Access\(_{i}^{TO}\) = access to turnover-induced job availability for an individual who lives in neighborhood \( i \);
Access\(_{i}^{NH}\) = access to job opportunities generated by employment growth for an individual who lives in neighborhood \( i \);
\( E_j \) = number of recently-filled non-college jobs in neighborhood \( j \); \( E = \) total number of recently-filled non-college jobs, \( E = \sum_{j=1}^{J} E_j \);
\( \lambda \) = distance decay parameter; \( d_{ij} \) = distance in miles between neighborhood \( i \) and \( j \);
\( NC_k \) = number of non-college educated individuals that live in neighborhood \( k \); \( NC = \) total number of non-college educated individuals, \( NC = \sum_{k=1}^{K} NC_k \).
1990 Residential Segregation in Atlanta
1990 Residential Segregation in Boston
1990 Residential Segregation in Los Angeles

Los Angeles MSA

Percent Black

0 - 0.091
0.091 - 0.26
0.26 - 0.477
0.477 - 0.699
0.699 - 0.954

City of Los Angeles
3,003,000 Miles

N
E
W
S

1990 Residential Segregation in Los Angeles

Percent Black

0 - 0.091
0.091 - 0.26
0.26 - 0.477
0.477 - 0.699
0.699 - 0.954

Los Angeles MSA
Atlanta MSA
Access to Turnover-Induced Non-college Job Availability
Boston MSA
Access to Turnover-Induced Non-college Job Availability
Los Angeles MSA
Access to Turnover-Induced Non-college Job Availability
Accessibility to Net Employment Growth

Boston MSA

Access: Net Hires

-2 - -1 Std. Dev.
-1 - 0 Std. Dev.
Mean
0 - 1 Std. Dev.
1 - 2 Std. Dev.
2 - 3 Std. Dev.
> 3 Std. Dev.
Los Angeles MSA
Access to Net Employment Growth

-3 - 2 Std. Dev.
-2 - 1 Std. Dev.
-1 - 0 Std. Dev.
Mean
0 - 1 Std. Dev.
1 - 2 Std. Dev.
2 - 3 Std. Dev.

Access: Net Hires

City of Los Angeles
Net Hires by Distance from Worker's Home: Atlanta, 1992-1993

Total Net Hires, past year

Net Hires by Distance from Worker's Home: Atlanta, 1992-1993

Miles from Average Worker's Home

Total Net Hires, past year

Blacks

Whites
Net Hires by Distance from Worker's Home: Boston, 1992-1993
Net Hires by Distance from Worker's Home: Los Angeles, 1992-1993

Total Net Hires, past year

Net Hires by Distance from Worker's Home: Los Angeles, 1992-1993

Miles from Average Worker's Home

Total Net Hires, past year

-70,000
-60,000
-50,000
-40,000
-30,000
-20,000
-10,000
0

Blacks

Whites

0 5 10
<table>
<thead>
<tr>
<th>Spatial Search Variables</th>
<th>Change in Variable</th>
<th>% Change in Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of Turnover-induced Job Access for White Non-college Grads</td>
<td>Mean to</td>
<td>5.2%</td>
</tr>
<tr>
<td>Effect of Turnover-induced Job Access for Black Non-college Grads</td>
<td>(1 std dev)</td>
<td>77.6%</td>
</tr>
<tr>
<td>Effect of Turnover-induced Job Access for Hispanic Non-college Grads</td>
<td>above</td>
<td>75.3%</td>
</tr>
<tr>
<td>Effect of Turnover-induced Job Access for Asian Non-college Grads</td>
<td>mean)</td>
<td>11.0%</td>
</tr>
<tr>
<td>Effect of Employment Growth Access for White Non-college Grads</td>
<td>Mean to</td>
<td>-7.7%</td>
</tr>
<tr>
<td>Effect of Employment Growth Access for Black Non-college Grads</td>
<td>(1 std dev)</td>
<td>43.6%</td>
</tr>
<tr>
<td>Effect of Employment Growth Access for Hispanic Non-college Grads</td>
<td>above</td>
<td>11.5%</td>
</tr>
<tr>
<td>Effect of Employment Growth Access for Asian Non-college Grads</td>
<td>mean)</td>
<td>-7.6%</td>
</tr>
<tr>
<td>Access to car when searched</td>
<td>0 to 1</td>
<td>48.3%</td>
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<tr>
<td>Rsv commute time (minutes)</td>
<td>20 to 40</td>
<td>-13.5%</td>
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<tr>
<td>Effect of searching in job-rich areas for non-college grads</td>
<td>0 to 1</td>
<td>34.9%</td>
</tr>
<tr>
<td># of steadily employed persons in social network</td>
<td>0 to 3</td>
<td>33.2%</td>
</tr>
<tr>
<td>Live in 10-30% poverty tract (ref. cat:&lt;10%)</td>
<td>0 to 1</td>
<td>-8.2%</td>
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<tr>
<td>Live in &gt;30% poverty tract</td>
<td>0 to 1</td>
<td>-10.1%</td>
</tr>
<tr>
<td>Search Method Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credential-based references</td>
<td>0 to 1</td>
<td>23.2%</td>
</tr>
<tr>
<td>Network-based references</td>
<td>0 to 1</td>
<td>-23.7%</td>
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<tr>
<td>Search intensity (hours per week)</td>
<td>8 to 9</td>
<td>3.2%</td>
</tr>
<tr>
<td>Relative reservation wage</td>
<td>1 to 1.10</td>
<td>-3.3%</td>
</tr>
</tbody>
</table>
Table 5a: Duration of Search Spells of Blacks and Whites Using Hazard Estimates: Evaluated at Different Levels of Job Accessibility

<table>
<thead>
<tr>
<th>Simulated Values</th>
<th>Proportion of Search Spells Successfully Completed in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; = 1 Month</td>
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<tr>
<td>Job Access Measures = Mean - SD:</td>
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<tr>
<td>Black non-college graduate</td>
<td>0.038</td>
</tr>
<tr>
<td>White non-college graduate</td>
<td>0.253</td>
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<tr>
<td>Job Access Measures = Mean:</td>
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</tr>
<tr>
<td>Black non-college graduate</td>
<td>0.094</td>
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<tr>
<td>White non-college graduate</td>
<td>0.247</td>
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<tr>
<td>Job Access Measures = Mean + SD:</td>
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<tr>
<td>Black non-college graduate</td>
<td>0.216</td>
</tr>
<tr>
<td>White non-college graduate</td>
<td>0.242</td>
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</tbody>
</table>
### Table 6: Decomposition of Black-White Differences in Hazard of Successfully Completing Job Search

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted weekly hazard (gap=.032) (evaluated at beginning of search spell)</td>
<td>0.039</td>
<td>0.070</td>
</tr>
</tbody>
</table>

**Contribution to the gap from racial differences in the following variables:**

1. Job Accessibility                    23.1%
2. Car ownership                        8.0%
3. Search in job-rich areas             5.1%
4. Social network quality                5.6%
5. Reservation commute time              2.8%
6. Search intensity                      9.5%
7. Human Capital Variables               10.0%
8. Demographic Variables                 5.1%

Total explained (All Variables)         69.3%
Summary of Main Results

• Job access for less-educated workers greatest in predominantly white suburbs, & these “job rich” areas are not served by public transportation.

• Large effects of job access for less-educated blacks and insignificant effects for similarly educated whites (mirror race differences in residential location constraint).

• Blacks’ greater sensitivity to local labor market demand conditions contribute significantly to black-white gap in search durations.

• Race differences in distribution of job access account for ¼ of black-white gap; included spatial search-related variables accounts for ½ of overall black-white gap.